Contesting Greek gas policy: geopolitical, energy and climate considerations

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Abstract

Three main drivers underlie states' intent to expand gas supply: energy security, geopolitics and climate goals. Such considerations also drive Greece's expansive gas policy, but come with significant caveats. First, pipeline politics entails geopolitical costs and inflated anticipated gains. Second, while gas supply has yielded energy security for Greece, its cost-effectiveness is contentious. Third, the gas option obscures the transition to smart, clean energy sources and systems. A rational actor model within a rationalist-weak cognitivist framework can account for Greece's gas policy. Yet, its limited success points to the need for a clean energy policy promising higher climate, energy and geopolitical gains.

Keywords

Energy security, geopolitics, climate change, Greece, natural gas, renewables

Energy policy begins with decisions on the sources of energy. In Europe, natural gas has ascended to primacy since the 1970s for a mix of energy security, geopolitical and environmental reasons (Wybrew-Bond 1999, 7). This ascending trajectory has relaxed in the last decade, contrary to what proved to be over-optimistic projections of gas production, consumption and trade (Hartley and Medlock 2006), with the global financial crisis being only

a partial explanation for this outcome. Dwindling reserves in many producing countries, high upfront costs, tough geological conditions, inimical geopolitical environments that hinder the construction of ambitious infrastructure projects, and the return of coal and advent of renewables make up a picture less hospitable to the future of gas (Stern 1999).

Leaving aside gas-rich states which have good reasons to perpetuate a gas-first policy (employment, boost of the domestic economy across the chain, export-born revenues), this article examines whether importing states should follow an expansive or retractive gas policy. In doing so, it debates the impact of the gas option on the energy security, geopolitical stand and climate policies of states that rely on gas use, and asks the following questions:

- Does reliance on gas serve, or compromise, importing states' energy security?
- Does it enhance or compromise their geopolitical stand?
- Does it serve or obstruct climate change goals?

The article subsequently formulates three hypotheses, one for each issue-area, which eventually merge into one grand hypothesis: states that see substantial benefits in their energy security, geopolitical and climate policies through gas use are expected to pursue an expansive gas policy. States that do not, are expected to retract from clinging to gas and formulate alternative energy policies.

The article tests these hypotheses in the case of Greece. The analysis is premised conceptually on the rational actor model that views states as rational, utilitarian agents pursuing the maximisation of their benefits (Legro and Moravcsik 1999, 18; Keohane 1993, 288; Baldwin 1993, 9). Rationality, however, is always contingent upon time, place and the social context (Lamborn 1997), within which ideas are born and evolve into anchors of state policy (Goldstein and Keohane 1993). It is shaped by states' strategic culture, which amounts to a set of ideas and shared assumptions among national policy-makers (Lock 2010). These frame the context

for decision-making and make it rational for one state to follow particular policy trajectories. Rationality hence incorporates actors' perceptions of appropriateness, referring in this context to its cognitive dimension, and understood as the congruence of situations and issues with pre-existing knowledge, experience and notions of suitability (March and Olsen 2004). Rationality, thus understood, comprises both causal and constitutive factors, which correspond to a logic of consequences and a logic of appropriateness/ suitability respectively (Hasenclever *et al*. 1997; Barnett and Finnemore 2004). Such an epistemology draws from both rationalist and weak cognitivist schools, but remains short of adopting a strong constructivist, intersubjective and identity-based discourse on policy.

More specifically, it is argued that history and geography convey a strong realist flavour to Greek energy policy (the geopolitical driver), and membership in the EU and progressive Europeanisation a pronounced liberal one (markets-based energy security). These, it is argued, inform decisions on gas policy, and in so doing downplay the third driver, climate policy, both as a goal and as a means to address energy and geopolitical issues in novel ways.

The next section elaborates on the three drivers of an expansive gas policy. After briefly setting the scene of the country's energy policy, the following section discusses how Greece's expansive gas policy, strongly informed by realist-liberal perspectives, fares in the energy security, climate and geopolitical realms. The case of Greece exemplifies the complexity of the issue, the underlying dilemmas, the spectre of the policy options and their potential implications. The conclusion sums up the debate and provides consequent policy recommendations.

Exploring the grounds for an expansive gas policy

Energy security

Energy security concerns secure supply of gas at affordable prices and in a sustainable way (Proedrou 2012, 3-4). These three dimensions, however, do not take up equal status: supply security is the utmost concern; when this is considered given, emphasis shifts to level of prices; the third dimension remains marginalised with respect to the other two (Helm 2014; Proedrou 2017b). For the purposes of this article, sustainability is covered in the discussion of climate imperatives.

For gas supply to be considered secure one or more of the following preconditions have to apply. Either a friendly state supplies gas on a stable and predictable basis (Norway-EU and Russia- Armenia gas relations fall into this category); or, the importing state enjoys a diversified portfolio, to the extent that any supply cuts from one supplier can be compensated by the other(s). The UK, importing gas from Norway, from different sources through pipelines linking it to the European mainland, and from distant suppliers via LNG is a good case in point (Demski *et al*. 2014). Diversification and liberalisation with an emphasis on ample infrastructure and storage capacity, though, boost the costs of gas supply, and hence also of final gas prices. Ensuring a multitude of energy corridors and capacity (slightly) higher than consumption implies costs that remain masked to consumers (Proedrou 2017c, 456). In addition, gas prices are macroscopically on the increase, mirroring ascending extraction costs in more challenging environments and high up-front costs, thus creating justifiable concerns as to the levels of affordability of future gas supply (Butler 2009, 129-31; Proedrou 2012). The recent dwindling gas prices render the cyclical problem of attracting investments for expensive infrastructure projects even more dire. This may squeeze supply in the next years and lead to higher prices until new transport schemes materialise, increasing traded quantities and restoring the market equilibrium (Stern 2017, 17-8).

Energy security in many cases defies an objective status. Perceptions matter to such an extent that some states are concerned even with slight dependence on (perceived as) non-friendly

exporters, while other states feel comfortable with strong dependence on a single supplier, if deemed reliable (Casier 2011). Hence, political, historical, ideational and cultural factors constitute intervening variables in energy security understandings and account for the significant variation in perceptions among actors in the energy field. In cases where states find themselves largely dependent on a single supplier deemed unreliable and rival (see, for example, Poland and Lithuania vis-à-vis Russia), or have an insufficiently diversified portfolio (see EU-Russia), energy security is considered at risk (Schmidt-Felzmann 2011).

Gas has been subject to securitisation exactly because of the regional nature of gas trade, the lack of alternative options and ensuing rigidity (Proedrou 2018a, 409-10; Skalamera 2018, 95). The ongoing globalisation of gas markets thus emerges as a welcome development for importers, in that it provides them with more options and more negotiating cards. This, however, can also be true for exporters, in the sense that they may acquire access to previously closed markets. In doing so, they may strike new commercial bargains, potentially at the cost of traditional customers (Grigas 2017). Market convergence also reinforces changes in commercial patterns and gas pricing formulas. The balance between traditional (long-term take or pay contracts at oil-pegged prices) and market-based commercial patterns (shorter contracts, exchanges in spot markets and prices defined through gas supply-demand dynamics) will tilt towards the latter the more gas markets become globalised, with regional markets operating at prices determined by global gas supply and demand dynamics (Kuzemko *et al.* 2015, 51). Although the current gas glut has facilitated access to and affordability of gas imports for consumers (50), market fundamentals could bring the opposite results in case supply tightens and/ or demand grows further (Hulbert and Goldthau 2013). In particular, the advent of the shale revolution has been a major driver of dwindling gas prices; in case shale gas is phased out either for economic (uncompetitive activity at low gas prices) or climate change reasons (see below) (Proedrou 2017b; 2018c), then one should expect a substantial rise in global gas

prices. All in all, participating in the globalizing gas markets may both enhance the importers' energy security and endanger it, depending on the unfolding market dynamics.

As long as gas supply derives from friendly states (or perceived as such) and/or a diversified portfolio of exporters, it is (perceived as) secure and serves energy security goals. To the extent that gas supply does not come at excessive costs, both for the country's purchasing power level and in relation to other energy sources, gas supply is also deemed affordable and hence in line with energy security priorities. One could then expect states to pursue an expansive gas policy on energy security grounds.

Geopolitical standing

Exporter-importer commercial relations and energy infrastructure are tightly intertwined with states' grand strategies; they translate into geopolitical leverage and constitute a means to achieve broader geopolitical goals (Proedrou 2018c; O'Sullivan 2013). Indeed, while made in the name of energy security, in many cases pipeline politics are more about geopolitical goals, national prestige and domestic goals, than energy security (Proedrou 2018a). That is why states engage in an active energy diplomacy. Attuning energy security prerogatives with broader foreign policy ambitions and putting them into synergistic use is a common feature of states' grand strategies.

Not only is gas trade with allies critical for energy security reasons, but geopolitical alliances are further cemented via energy cooperation (O'Sullivan 2013, 40-1). Frustrating cooperation within rival camps and weakening their cohesion, as well as constraining energy cooperation with/dependence on rival states at the same time, has always been a fundamental foreign policy goal. US Cold War and post-Cold War energy policy in Europe mirrors this strategic imperative. Breaking the Russian energy monopoly in Eurasia and restraining its market share

and ensuing geopolitical leverage has been an enduring priority of US foreign energy policy (Stern 1999, 153; Cornell *et al*. 2005, 31; Gallis 2007).

While this is a clear-cut case, others are much more complex. States belong to different constellations of alliances with partially overlapping memberships; these embody all sorts of bilateral relationships extending from openly rival to secure and friendly. States hence are implicated in an intriguing web of interlinked issues and contrasting interests, which may pit them against other countries, or place them in the uneasy position of having to choose sides in an unfolding battle between different partners (Boyle 2016). Southeast European states, for example, are under pressure from both the US and Russia to follow different energy paths (Leonard and Popescu 2017; Maltby 2015).

In a nutshell, prioritizing gas supply makes sense in case this is in line with broader geopolitical interests/preconditions. As long as gas trade and diplomacy does not compromise, but rather works in a supportive mode to states' grand strategies, states are expected to follow an expansive gas policy.

Climate change

With the advent of climate change energy and climate policy have become closely interlinked (Bradshaw 2014; Kuzemko *et al.* 2015). In light of the pressing need for stabilisation of greenhouse gas emissions and adherence to strict carbon budgets, it is argued that in this critical juncture natural gas constitutes the ideal bridge fuel. This is so because stable energy flows can thus be maintained with lower emissions compared to coal- and oil-based energy consumption, allowing time for technology to provide cleaner solutions more efficiently (Franza *et al.* 2016; Kuzemko *et al.* 2015, 49, 121). In fact, the coal-to-gas switch brought down gas emissions significantly in the UK in the 1990s, in Poland in the 2000s and in the US in the 2010s (Kuzemko *et al.* 2015, 116, 121; Judge and Maltby 2017, 21).

However, this discussion merits further qualification. It is essential to make it clear that while gas is cleaner than oil and coal, it still emits and thus remains inferior to renewable solutions. Accordingly, gas proponents implicitly compare gas with other fossil fuels, while gas critiques do so vis-à-vis renewables. A number of caveats also remain. First, as a fossil fuel, gas presents many drawbacks (dirty exploration, pollution, damage to ecosystems, water intensity, non-renewable and hence peak concerns for the future, and dependence on resources unequally scattered around the world). Secondly, natural gas also includes shale gas: in terms of water intensity, ecological damage and methane and carbon emissions, shale gas is far from environment-friendly; in many cases it is deemed more harmful even than coal (Bradshaw 2014, 61-69; Stern 2017, 13). Low gas prices have partially been an effect of the shale revolution; while shale gas makes overall gas trade more competitive and hence affordable for importers, restricting shale gas for climate reasons would effectively increase gas prices. A clear trade-off between affordability and sustainability is at play here; it seems that gas cannot be at the same time both economic and climate-friendly (Proedrou 2017b, 194). Thirdly, contemporary investments in gas will translate into substantial lock-in effects further in the future, thus weakening the argument that gas will pave the way for cleaner forms of energy (Kuzemko *et al.* 2015, 49, 121).

In short, gas is a transition fuel only to the extent that it replaces coal and oil, and neither implicates the advent of shale gas, nor prevents the emergence and upscale of cleaner forms of energy. In these cases, natural gas can strengthen climate policy.

The case of Greece

Greece first imported gas in the mid-1970s. Four decades later, natural gas imports amount to 4.1 billion cubic meters (bcm), a 23 percent rise since 2006. This corresponds to a 15 percent share of total primary energy supply, 28 percent of electricity generation, and a still small but

rapidly rising share in total final consumption over the last decade. Gas use has penetrated mostly the heat/ power generation and industrial sectors, a development that has become conspicuous with the expansion of the domestic gas pipeline system to reach more consumers. Although the severe financial crisis brought a temporary decline in gas use in the early 2010s, gas consumption is again on the increase (IEA 2017, 43-4), with projections for 2020 and 2030 showing a relative stabilisation of gas consumption (Honore 2014, 111).

Since the late 2000s, Greece's gasification policy neatly matches its vibrant gas diplomacy. In particular, Greece has given its explicit support to infrastructure projects in its neighbourhood that involve it, and has repeatedly declared its ambition to increase its gas imports and become a gas hub in southeast Europe (Hellenic Republic - Ministry of Foreign Affairs 2017; Jirušek *et al.* 2017, 340). The first such scheme was the Interconnector, linking the South Caucasus gas pipeline to Greece via Turkey. Greece was also eager to participate in the Russia-led South Stream pipeline (Jirušek *et al.* 2017, 340), and, once this was scrapped, to the Italy-Greece Interconnector/Poseidon pipeline (Siddi 2017, 12). At the same time, Greece joined the ongoing Transadriatic pipeline (TAP) project (Siddi 2017). Greece also struck a deal with Cyprus, Israel and Italy for the construction of the EastMed pipeline that is to ship East Mediterranean gas via Greece westwards (Prontera 2017, 218-9). Greece has already expanded the receiving capacity of its main LNG terminal at Revythousa, and is examining the option of constructing another receiving terminal in the north of the country (IEA 2017, 49).

Table 1: Greece's participation in regional gas infrastructure

Pipelines	**LNG**
EastMed is designed to to ship East Mediterranean (Israeli/Cypriot) gas via Greece	Expansion of Revythousa LNG terminal (Algerian gas)
IGI/Poseidon is designed to carry Azeri (and potentially further into the future Caspian, Central Asian and Middle Eastern) gas to Italy via Greece	Construction of new LNG terminal (Algerian gas)
Interconnector linking South Caucasus gas pipeline (starting in Azerbaijan and shipping Azeri gas) to Greece via Turkey	
South Stream was designed to carry Russian gas under the Black Sea to Bulgaria, and from there to expand to Greece and other European countries westwards	
Transadriatic (TAP) is under construction to connecting Italy with Greece carrying Azeri gas	
Turkish Stream is designed to ship Russian gas under the Black Sea to Turkey. It could potentially link to IGI/Poseidon in the	

future and hence carry Russian gas to Greece and Western Europe	

The historical, social and ideational context shapes Greek policymakers' rationale. A turbulent geopolitical environment conveys a strong realist flavour to Greece's international posturing, which has progressively been influenced by Europeanisation and a liberal approach/ agenda (Tsakonas 2010; Heraclides 2010). With this conceptual mindset, it is fitting for Greek policymakers to link energy security with liberal markets and geopolitics, which converge in a preference for pipeline politics (logic of appropriateness/ suitability) (Proedrou 2018a). The assumption that pipeline deals can yield both energy and geopolitical benefits sets in motion the logic of consequences driving pipeline diplomacy. However, such a logic of appropriateness/ suitability does not take into consideration climate policy, as climate policy remains unlinked to energy security and geopolitics even though, it is argued, the benefits deriving from a ground-breaking climate policy are superior to those from conventional gas pipeline politics. The logic of consequences should drive Greece to tap into such benefits; this, however, presupposes social learning, a revisiting of mainstream realist-liberal conceptual underpinnings, and a concomitant shift in perceptions regarding the synergies between geopolitics, energy and climate goals.

Markets-based energy security: gains and caveats

Greek energy security is premised upon the competitive and diversified function of liberal energy markets. Natural gas, in this context, constitutes a significant pillar of Greece's energy security policy, adding another fuel and thus diversifying energy sources. Importantly, gas imports have been reliable, and constitute stable energy flows to the Greek economy. The only exception has been the Russo-Ukrainian crisis that led to a halt in deliveries throughout

southeast Europe for more than two weeks in early 2009. This episode made evident Greece's reliance on a single route for Russian gas (Richter and Holz 2015, 179). Greece, like other customers, was held hostage to a politico-economic conflict between Russia and transit country Ukraine. In this context, Greece's eagerness to embrace the South Stream project made sense, as it would create a more secure route bypassing Ukraine. Positive perceptions of Russia as a traditionally friendly partner also assuaged fears of Russia assuming a hostile energy policy vis-à-vis Greece (Jirušek *et al*. 2017, 340). Moreover, Greece's resilience was remarkable. Contracted quantities and agreements for further LNG shipments from Algeria (albeit at higher prices) allowed Greece to weather the crisis comfortably, even if it had been prolonged. Greece's gas diversification policy, in other words, ensured steady supply security even under adverse conditions (Kovacevic 2009, 10-11).

A significant caveat of Greece's evolving energy security policy is that diversification through Azeri gas via the Interconnector creates dependency on transit through Turkey. Such dependency might not have been so problematic when Greek-Turkish relations were going through a positive phase, as was the case in the late 1990s. With the heightened bilateral rivalry around the Aegean and Cyprus however, it is in Greece's interest to keep incoming Azeri energy quantities transiting through Turkey (for own Greek use) to a minimum. Such concerns are further extenuated in case Turkish Stream, a pipeline currently under construction that will carry Russian gas to Turkey, (this has not been mentioned ?) feeds the IGI/Poseidon pipeline, effectively substituting the central corridor shipping Russian gas via Ukraine (this is not in the table). As recent interruption crises have shown, when the stakes are high, states are not dissuaded by implicated penalties, and economic and reputational damage from using energy as a weapon (is this correct as I have put it ?). Transit dependence on a traditional foe hence constitutes a potential risk for Greek energy security (Proedrou 2015; Proedrou 2017a, 31).

From an affordability perspective, Greece's pipeline diplomacy has targeted transit fees, which amounts to discounted gas deliveries. Greece has also managed to renegotiate existing contracts with Russia, against a background of falling gas prices in spot markets, thereby attaining significant discounts for gas supplies, even though the fact that they remain tied to the price of oil does not assuage concerns for future price volatility (Proedrou 2018b, 81). Moreover, the increase in gas supplies, especially over the last fifteen years, requires an extension of domestic gas infrastructure, which increases retail prices.

More broadly, Greek energy security is contingent upon the geopolitical imperatives that will mould the strategic decisions of the principal stakeholders (US, China, Qatar, Russia), and define the market fundamentals (supply-demand dynamics, regulatory framework, price formulas and contractual patterns) of future gas geopolitics (Hulbert and Goldthau 2013). Furthermore, low prices discourage energy infrastructure investments in the current conjuncture. New pipelines are uneconomic to build and, hence, more often than not do not make it to the implementation stage (Proedrou 2018a). This paves the way for higher prices in the future since, when more supply becomes available, the infrastructure to ship this gas will be absent, further influencing supply-demand dynamics (Proedrou 2018c; Stern 2017). The incongruent time-scales of gas business projects and energy security imperatives make this a significant caveat for Greek gas security as well.

In all, there are limits to how far liberal gas policies can ensure gas security. Greece's market-based energy approach hence calls for some revisiting, in line with the broader EU external gas policy (Boersma and Goldthau 2017).

Aspiring to geopolitical benefits through energy

Greece has three intertwined grand strategy goals. The one is to act as an anchor of stability in its broader neighbourhood. The second is the peaceful resolution of open disputes with neighbours, primarily Turkey, within the framework of international law and treaties (Dokos and Tsakonas 2003; Tsakonas 2010; Heraclides 2010). The third is to retain a relative balance of power with, and leverage its own position vis-à-vis, Turkey, with an eye to thwarting any unilateral Turkish moves that could threaten Greece's sovereign rights. In this context, Greek foreign policy is solidly tied to and embedded in US-led NATO. Nevertheless, NATO's lack of security guarantees to Greece vis-à-vis fellow NATO member Turkey, and perceptions of constant Russo-Turkish friction, reinforce Greece's drive to maintain amiable relations, open channels of political communication and alliance rhetoric, and significant military trade ties with Russia (Tziampiris 2010). Greece's membership in the EU provides additional channels for Greek foreign policy and diplomacy and implicit guarantees of solidarity in case of Turkish aggressiveness. Becoming an energy hub may provide further guarantees to Greece's security and territorial integrity.

Greek proclivity to support the EU gas diversification agenda is dictated by Greece's grand strategy. First, entering the pipeline map and becoming an essential transit country will amplify Greek geopolitical leverage. Second, transit status provides an extra negotiating card for the country, which can be used in negotiations through issue-linkages (Proedrou 2018a, 411). These considerations remain vague, however, and have yet to be translated into tangible outcomes in the service of (any of) Greece's three principal foreign policy goals.

The above notwithstanding, underneath Greece's gas diplomacy lurk two contradictions. First, the energy security discourse is dominated by the stark divide and incoherence between a Russia-centric and an anti-Russian (translated in policy terms in US-friendly) perspective. The

latter sees dependence on Russian gas as dangerous and advocates a reduction of gas imports from, and no further infrastructure deals with, Russia. The former prioritises good relations with Russia to ensure stable gas flows and enhance energy security (Proedrou 2017b, 91-99). This feeds into an ambiguous gas diplomacy. On the one hand, Greece lies in the frontline of diversification projects, such as the Interconnector, TAP and EastMed pipelines and LNG receiving terminals, which serve US geopolitical interests. At the same time, Greece endorsed and joined the Russia-sponsored South Stream project and, subsequently, the IGI/Poseidon project that is designed to link up to Turkish Stream, both of which would perpetuate Greek and aggravate EU dependence on Russian gas. At a regulatory level in the EU context, Greece has backed a conciliatory stance that would allow Gazprom to maintain its EU market share, rather than sided with those members pushing for effective limitation of Gazprom's share in the EU market (Leonard and Popescu 2017, 27-9). As a result, Greece seems to oscillate between policies that play to both Russian and US energy interests. This contrasts with its more refined foreign policy approach and may either compromise Greece's ability to stick to its foreign policy priorities, or undermine its energy security.

Secondly, Greece aims to advance its own geopolitical standing not only in vague, absolute terms, but also in relative terms, vis-à-vis Turkey. This competition is explicit, also taking into account Turkey's declared goal to evolve into an energy hub, and is played out across two antithetical and mutually exclusive transport projects: South Stream vs. Turkish Stream, and the EastMed pipeline vs. a pipeline shipping Israeli gas to Turkey (the TAP project advances both countries' interests in a non-conflictive way as it is transit-only for Greece). In the latter antithetical pair, options via Turkey have been muted for geopolitical reasons, but the EastMed option still comes up against significant obstacles. These include complicated geopolitics, low gas prices to finance new infrastructure, and difficulties in increasing regional supply enough to justify the cost of expensive pipelines (Prontera and Ruszel 2017). The prospects hence

remain bleak for any pipeline project carrying East Mediterranean gas, let alone for both of them, to materialise (Baconi 2017).

Contrary to this lose-lose case, in the former (antithetical pair) Turkish Stream has won over South Stream; in case Greece aspires to become a transit state as well, this will be done in tandem with, rather than at the cost of Turkey's emerging gas hub status. This is an asymmetrical win-win situation as Turkey's emerging gas hub status is superior to Greece's transit status, and conveys more leverage to Turkey than to Greece, especially if one takes into account the energy security dimension analysed above. Hence, all in all, Greek endeavours to reap geopolitical benefits through energy remain inconclusive at best, counter-productive at worst.

Realist and liberal lenses undermine the climate driver

Greece's expansive gas policy must also be conceptualised within Greece's uptake of climate responsibility in the context of the EU's Kyoto Protocol commitments and Emissions Trading System, the EU's 20-20-20 goals for 2020 and the 40-40-27 goals for 2030, and further commitments under the 2015 Paris Agreement (Pelerin-Carlin 2017). In particular, gas is seen as a greener fuel that can help fulfil Greece's emission reduction targets, by covering the gap of diminishing domestic coal production. Nevertheless, coal remains the second most used fuel behind oil. Strikingly, while decommissioning old coal-fired plants, Greece is also planning to build two modern lignite-fired plants (IEA 2017, 66). This weakens the argument that gas displaces coal and hence serves climate purposes. At the same time, the penetration of gas has left the primary role of oil intact (amounting to half the country's energy consumption). This is because, while compressed natural gas has made some inroads as a transport fuel for vehicles, it is not used by trucks and ships in LNG form (19-20). Moreover, Greece's participation in the globalizing gas market through its (even if marginal) gas demand indirectly encourages shale

gas exploration, a factor undermining climate goals. At the same time, gas contracts extending into the future, internal gas infrastructure and gas diplomacy aspiring to render the country a gas hub are bound to create significant lock-ins. With new lignite-fired plants under construction and oil's high share intact, the scope for cleaner forms of energy dominating the market is limited, ironically just at a time when renewables have become competitive (Kuzemko *et al.* 2015, 122). While Greece is on the path to achieving its 18 percent renewable share commitment (which it unilaterally raised to 20 percent) by 2020 (IEA 2017, 67, 88, 101), one could make a strong case that alternative policies would constitute substantially superior options.

This argument has several converging threads. Firstly, Greece is a sun-lit and wind-endowed country; the potential for solar and wind power to replace coal thus seems much greater than increasing gas imports. The country has opted for a bulk utility model to supply the central grid with renewable sources of energy (Leal-Arcas *et al*. 2017, 165), but has done so only to reach the modest goals set, much below other countries, such as Spain (Solorio and Fernandez 2017). At the same time, while priority access to the grid is maintained for renewables, feed-in tariffs have been phased out and replaced by bidding systems and feed-in-premiums (Hellenic Republic - Ministry of Environment 2016), a development that is very likely to weaken incentives for investors, as has been the case in other countries (Balcombe *et al.* 2014). Moreover, Greece is investing in a policy to connect its islands with the mainland grid (IEA 2017). Yet, in light of the decentralised nature of the country's geography, its hundreds of dispersed islands and spacious rural, mountainous areas would benefit much more from a decentralised energy model including stand-alone, off-grid systems and community energy projects. Only pilot projects of this kind are currently in operation (see, for example, WiseGRID 2019), a fact paying lip service to the circumscribed and delayed emphasis ceded to this potential. The law that allows citizens to produce energy to cover part of their own needs

(self-consumption) was only passed in 2016, and it remains to be seen what incentives will be given for such schemes (Leal-Arcas *et al*. 2017, 164-5).

Furthermore, the electricity markets are undergoing wide-ranging reform, creating opportunities on both the supply and demand sides (Parag and Sovacool 2016). The introduction of demand response management remains sluggish in Greek households. Load-shedding remains the sole option for balancing the grid, which takes place in a day-ahead market, as an intra-day and a balancing market remain undeveloped (IEA 2017, 61). Smart grids, smart meters and in-home automation displays have not been built and developed; as a result, the potential for rationalizing and minimizing energy use, and rendering it more efficient, is wasted. That said, Greece is working towards the implementation of the EU energy acquis and the full liberalisation/ deregulation of its electricity market (IEA 2017). Still, it has yet to establish a functioning, networked, smart, clean and efficient *prosumers*' market and reap the benefits other much less sun-lit countries enjoy (Leal-Arcas *et al*. 2017, 166-7).

One might counter that the costs involved in such an extensive overhaul of the energy system, together with potential contingencies upon third parties across the supply chain, weaken the argument presented here. Yet, such investments regard energy flows, rather than stocks, meaning that dependence is not prolonged into the future. Furthermore, all investments into the domestic economy differ qualitatively from foreign exchange raised to pay for fossil fuel imports in that they constitute financial multipliers that trickle down to the domestic economy and society (Proedrou 2017c). Such funds can originate from EU structural funds. They can also displace poorly targeted support measures: for example, support mechanisms for clean energy investments can be advanced instead of subsidised electricity prices and oil purchases. Such schemes can be sustainably refinanced by a national fund that would be credited with the money saved from the lower foreign exchange needed to purchase oil and gas. Yet, Greece fails to tap into the benefits deriving from such a fast-track energy transition, as the conceptual

link between climate policy, energy security and geopolitics remains frail, with no evidence that Greek policymakers view the three realms as connected. On the contrary, liberal and realist understandings of energy security are explicit and predominate, providing specific trajectories to energy policy via a preference for gas pipeline politics.

Discussion and conclusion

This article has attempted to provide objective grounds for an expansive gas policy, and juxtaposed them to the effects of Greece's gas policy across the country's geopolitical, energy and climate goals. The findings reveal persistent difficulties in reaping geopolitical fruits through energy, as well as geopolitically induced limits to liberal energy security approaches. Together with the small climate benefits of an expansive gas policy, they lend only limited support to Greece's current expansive gas policy. The question that logically emerges is why, Greece, a rational actor, pursues such a course. The main argument is that the country's strategic culture, its history of turbulent relations with neighbours, foremost Turkey, and its membership in the liberal-minded EU, have informed the rationale and framed the context within which Greek policymakers view the gas option. Due to an entrenched link between energy security and both liberal markets and geopolitics (logic of appropriateness/ suitability) and in order to reap energy and geopolitical benefits (logic of consequences), Greek gas policy is anchored in pipeline politics, despite the implied energy security and geopolitical trade-offs that call for more policy attention.

One could counterargue that Greece's gas policy is consonant with the country's domestic gas exploration strategy. Greek gas policy hence should not be dismissed as sub-optimally rational. The gas potential of the country, however, remains unproven and a mid-term prospect at best, while contravening the quest towards fossil divestment, carbon bubble concerns and climate

policy. The real value of future gas production moreover is mired in uncertainty, as it will be contingent on the future shape of gas markets and climate imperatives.

The realist-liberal informed rationale blurs another promising option for Greece: a comprehensive clean energy agenda that can yield superior climate performance and energy security, while avoiding current geopolitical adversities and potentially opening up interesting new geopolitical trajectories. This cannot be explained in terms of the logic of consequences; exactly the opposite, while multiple benefits exist, the conceptual mindset to link climate, energy and geopolitical realms is lacking. Social learning can create adaptation dynamics and give birth to a novel logic of appropriateness/ suitability, in which clean energy markets can address climate, energy and to some extent geopolitical issues.

In particular, the establishment of clean energy markets achieves diversification of the energy mix with domestic, reliable energy sources; minimises dependence on external suppliers; foregoes the need for costly infrastructure to afford a diversified portfolio, which raises final prices; and minimizes uncertainty deriving from remote centres of decision-making regarding gas geopolitics and markets (Siddi 2017).

On the geopolitical front, a sustainable energy approach would decrease diplomatic costs and the contradictions inherent in the country's gas diplomacy; eliminate the need to devote excessive political energy to gas diplomacy; and not generate/ rely upon inflated expectations. It could be contested that the overhaul of the energy system would mean that Greece would withdraw from gas diplomacy and that, presumably, this would enhance Turkey's energy and geopolitical role in the region, thus harming Greece's central interests. Yet, Greece's pipeline diplomacy does not manage to undermine that of Turkey; Greece still struggles to press forward with EastMed, while Turkish Stream has won over South Stream. At the same time, Greece could influence broader energy developments in southeast Europe by the power of example rather than the power of diplomacy. By putting in place resilient, clean-sourced, smart energy

systems, it can provide useful blueprints and know-how for the diffusion of alternative modes of energy security; showcase that energy security can be achieved with a retractive gas policy; and contribute to a revisiting of gas-first policies in southeast Europe and the EU in general. Rather than aiming to strike victories in the gas field, an alternative proposal for energy diplomacy is a strategy aiming to shift from the geopolitical gas game to the establishment of clean energy systems (Siddi 2017).

In climate change terms, lastly, the superiority of this option is evident, as it trades clean for fossil energy and fares better across the country's three entrenched climate targets. This cumulative appraisal opens up the wider debate of the prudence of an expansive Greek gas policy, and strengthens the case for revisiting the gas option altogether.

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